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10/753,101	01/06/2004	Xiaodong Jin	MP0331	2774

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EXAMINER	
EKONG, EMEM	
ART UNIT	**PAPER NUMBER**
2688	

DATE MAILED: 10/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/753,101	JIN ET AL.	
	Examiner	Art Unit	
	EMEM EKONG	2681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *01/06/04&05/31/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because of the following minor informalities: On line 1, replace "an" with --a-- before "low". Correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-6, 8-13, 24, 26,27,31,33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,897,729 B1 to Xiaodong Jin (Jin et al.) in view of U.S. Patent No. 6,169,449 B1 to Osamu Hasegawa (Hasegawa).

Regarding claim 1, Jin et al. discloses a wireless transceiver, comprising:

an amplifier configured to receive an input RF signal, the amplifier including a biasing system; the biasing system including a low noise amplifier (LNA) to amplify the input RF signal; (see figure 1, col. 1 lines 35-40, and col. 2 lines 33-39)

a bias circuit configured to provide a bias output to the LNA (see figs. 4 and 6, col. 1 lines 39-42, and col. 2 lines 34-60).

However, Jin et al. fails to disclose a bias circuit configured to provide a bias output to the LNA during a time the LNA is operating in a first mode,

a circuit configured to maintain the bias circuit in an operating state during a time the LNA is operating in a power down mode; and

a switch circuit configured to switch the bias output from the LNA to the circuit when the LNA is powered down from the first mode to the power down mode.

Hasegawa discloses transmission power control circuit capable of varying electric power over a wide range, and further discloses a bias circuit configured to provide a bias output to the LNA (power amplifier) during a time the LNA is operating in a first mode (see figure 4, and col. 6 line 17-col. 7 line 54),

a circuit (bypass circuit) configured to maintain the bias circuit in an operating state during a time the LNA is operating in a power down mode (col. 2 lines 14-20); and

a switch circuit configured to switch the bias output from the LNA to the circuit when the LNA is powered down from the first mode to the power down mode (col. 4 lines 58-62,).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the wireless transceiver of Jin et al. with the teachings of Hasegawa for the purpose of controlling the transmission power of the transceiver, by adding a circuit configured to maintain the bias circuit in an operating state during a time the LNA is operating in a power down mode, and a switch configured to switch the bias output from the LNA to the circuit when the LNA is powered down.

Regarding claim 2, the combination of Jin et al. and Hasegawa discloses the wireless transceiver of claim 1, however, Jin et al. fails to disclose wherein the circuit is operational only when the LNA is operating in the power down mode.

Hasegawa discloses wherein the circuit is operational only when the LNA is operating in the power down mode (col. 2 lines 14-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the wireless transceiver of Jin et al. with the further teachings of Hasegawa for the purpose of controlling the transmission power of the transceiver.

Regarding claim 3, the combination of Jin et al. and Hasegawa discloses the wireless transceiver of claim 1, wherein the bias output is a bias current (Jin et al., col. 3 lines 5-25)

Regarding claim 4, the combination of Jin et al. and Hasegawa discloses the wireless transceiver of claim 1, wherein the bias output is a bias voltage (Jin et al., col. 3 lines 39-43).

Regarding claim 6, the combination of Jin et al. and Hasegawa discloses the wireless transceiver of claim 1, however Jin et al. fails to disclose wherein the LNA consumes less power when operating in the power down mode than when the LNA is operating in the first mode.

Hasegawa discloses wherein the LNA consumes less power when operating in the power down mode than when the LNA is operating in the first mode (col. 1 lines 25-35, col. 3 line 60-col. 4 line 10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jin et al., and have the LNA consumes less power, as taught by Hasegawa for the purpose of controlling the transceiver.

Regarding claim 8, Jin et al. discloses a wireless transceiver, comprising: receiving means (An amplifier comprises a Low Noise Amplifier (LNA) that amplifies a Radio Frequency (RF) signal and that includes a transconductance, a gain and an input stage that receives the RF signal) for receiving an input RF signal, the receiving means including a biasing system; the biasing system including, amplifying means for amplifying the input RF signal (abstract, fig. 1, col. 1 lines 35-40, col. 2 lines 33-39);

biasing means (i.e. biasing circuit or system) for providing a bias output to the amplifying means (see figs. 4 and 6, col. 1lines 39-42, col. 2 lines 34-60).

However, Jin et al. fails to disclose biasing means for providing a bias output to the amplifying means during a time the amplifying means is operating in a first mode

maintaining means for maintaining the biasing means in an operating state during a time the amplifying means operating a power down mode; and

switching means for switching the bias output from the amplifying means to the maintaining means when the amplifying means is powered down from the first mode to the power down mode.

Hasegawa discloses biasing means for providing a bias output to the amplifying means during a time the amplifying means is operating in a first mode (see figure 4, and col. 6 line 17-col. 7 line 54),

maintaining means (bypass circuit) for maintaining the biasing means in an operating state during a time the amplifying means operating a power down mode (col. 2 lines 14-20); and

switching means for switching the bias output from the amplifying means to the maintaining means when the amplifying means is powered down from the first mode to the power down mode (col. 4 lines 58-62).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the wireless transceiver of Jin et al. with the teachings of Hasegawa for the purpose of controlling the wireless transceiver with the use of a switching means configured to switch the bias output from the LNA to the maintaining

means when the LNA is powered down, the maintaining means configured to maintain the bias circuit in an operating state during a time the LNA is operating in a power down mode.

Regarding claim 9, the combination of Jin et al. and Hasegawa discloses the wireless transceiver of claim 8, however, Jin et al. fails to disclose wherein the maintaining means is operational only when the amplifying means operating the power down mode.

Hasegawa discloses wherein the maintaining means is operational only when the amplifying means operating the power down mode (col. 2 lines 14-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jin et al. with the switching circuit of Hasegawa for the purpose of controlling the transmission power of the transmitter.

Regarding claim 10, the combination of Jin et al. and Hasegawa discloses the wireless transceiver of claim 8, wherein the bias output is a bias current (Jin et al., see figs. 4 and 6 and col. 3 lines 5-25).

Regarding claim 11, the combination of Jin et al. and Hasegawa discloses the wireless transceiver of claim 8, wherein the bias output is a bias voltage (Jin et al., see figs. 4 and 6 and col. 3 lines 39-43).

Regarding claims 5 and 12, the combination of Jin et al. and Hasegawa discloses the wireless transceiver of claims 1 and 8, however, Jin et al. fails to disclose wherein the maintaining means and circuit is configured to maintain a lead to the bias

circuit at a predetermined operating voltage level during a time the amplifying means and the LNA is operating in the power down mode.

Hasegawa discloses wherein the maintaining means and circuit is configured to maintain a lead to the bias circuit at a predetermined operating voltage level during a time the amplifying means and the LNA is operating in the power down mode (col. 3 line 60-col. 4 line 10, and col. 6 lines 55-61).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jin et al. with the teachings of Hasegawa for the purpose of controlling the transmission power of the transceiver operating in different modes with the use of a switch and maintaining means and circuit.

Regarding claim 13, the combination of Jin et al. and Hasegawa discloses the wireless transceiver of claim 8, however, Jin et al. fails to disclose wherein the amplifying means consumes less power when operating in the power down mode than when the amplifying means is operating in the first mode.

Hasegawa discloses wherein the amplifying means consumes less power when operating in the power down mode than when the amplifying means is operating in the first mode (col. 1 lines 25-35, col. 3 line 60-col. 4 line 10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jin with the teaching of Hasegawa for the purpose of controlling the transmission power of the transceiver.

Regarding claims 24 and 31, Jin et al. discloses a biasing system, however fails to disclose a biasing system for biasing a main circuit configured to operate in a first mode and a power down mode, the biasing system comprising:

a maintaining means and circuit configured to maintain a bias circuit in an operating state during a time a main circuit is operating in a power down mode; and

a switching means and switch circuit configured to switch a bias output of the bias circuit from the main circuit to the circuit when the main circuit is powered down from the first mode to the power down mode.

Hasegawa discloses a biasing system for biasing a main circuit configured to operate in a first mode and a power down mode, the biasing system comprising:

a maintaining means and circuit (bypass circuit) configured to maintain a bias circuit in an operating state during a time a main circuit is operating in a power down mode (col. 2 lines 14-20); and

a switching means and switch circuit configured to switch a bias output of the bias circuit from the main circuit to the circuit when the main circuit is powered down from the first mode to the power down mode(col. 4 lines 58-62).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the wireless transceiver of Jin et al. with the teachings of Hasegawa for the purpose of controlling the transmission power of the transceiver, by adding a circuit configured to maintain the bias circuit in an operating state during a time the LNA is operating in a power down mode, and a switch configured to switch the bias output from the LNA to the circuit when the LNA is powered down.

Regarding claims 26 and 33 the combination of Jin et al. and Hasegawa discloses the biasing system of claims 24 and 31, wherein the bias output is a bias current (Jin et al., see figs. 4 and 6 and col. 3 lines 5-25).

Regarding claims 27 ad 34, the combination of Jin et al. and Hasegawa discloses the biasing system of claim 24 and 31, wherein the bias output is a bias Voltage (Jin et al., see figs. 4 and 6, and col. 3 lines 39-43).

6. Claims 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jin et al. in view of Hasegawa, and further in view of U.S. Publication No. 2004/0102173 A1 to Hooman Darabi (Darabi).

The combination of Jin et al. and Hasegawa discloses the wireless transceiver of claims 1and 8, however the combination fails to disclose wherein the wireless transceiver compliant with an IEEE standard selected from the group consisting of 802.11, 8O2.11a, 802.11b, 8O2.11e, 802.11g, 8O2.11h, and 802.11i, and 802.14.

Darabi discloses wherein the wireless transceiver is compliant with an IEEE standard selected from the group consisting of 802.11, 8O2.11a, 802.11b, 8O2.11e, 802.11g, 8O2.11h, and 802.11i, and 802.14 (pars. 0002, 0004, and 0005).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination with the teaching of Darabi for the purpose of using a wireless transceiver that is in compliant with IEEE standard.

7. Claims15-23, 25, 28-30, 32, and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jin et al. in view of Hasegawa, and further in view of U.S. Patent No. 6,766,156 B1 to Mikio Hayashihara (Hayashihara).

Regarding claim 15 the Jin et al. discloses a method for biasing a circuit to be powered down, however, Jin et al. fails to disclose the method comprising: switching a bias output from a bias circuit coupled to a first circuit to a second circuit; and maintaining the bias circuit at an operating state while the first circuit is powered down.

Hayashihara discloses the method comprising: switching a bias output from a bias circuit coupled to a first circuit to a second circuit; and maintaining the bias circuit at an operating state while the first circuit is powered down (reads on claim 15)(see figure 4, col. 2 lines 48-63, col. 4 line 60- col. 5 line 5, col. 7 line 63-col. 8 line 13, and col. 10 lines 7-52);

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Jin et al., by switching a bias output from a bias circuit coupled to a first circuit to a second circuit; and maintaining the bias circuit at an operating state while the first circuit is powered down with the teaching of Hayashihara for the purpose of controlling the transmission power of the transceiver.

Regarding claims 16-18 the combination of Jin et al. and Hasegawa discloses the method of claim 15. However, Jin et al. fails to disclose powering down the first circuit including reducing power consumption of the first circuit (claim 16);

comprising powering down the first circuit including shutting off current flowing through the first circuit (claim 17); and

wherein the first circuit is an LNA(claim 18).

further comprising powering down the first circuit including reducing power consumption of the first circuit (reads on claim 16)(col. 10 lines 7-19);

comprising powering down the first circuit including shutting off current flowing through the first circuit (reads on claim 17)(col. 10 lines 26-53); and

wherein the first circuit is an LNA (reads on claim 18) (see figure 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination with the teaching of Hayashihara for the purpose of controlling the transmission power of the transmitter.

Regarding claims 19-23, the combination of Jin et al. and Hasegawa discloses the method of claim 15, and a bias output including a bias current and voltage (reads on claims 21 and 22) (Jin et al., see figs. 4 and 6 and col. 3 lines 5 and 25).

However, the combination fails to disclose wherein the second circuit has a lower current draw than the first circuit (claim 19);

wherein the second circuit is operational only when the first circuit is powered down(claim 20);

switching a bias output includes switching a bias current and voltage from the first circuit to the second circuit (claims 21 and 22); and

wherein maintaining the bias circuit at the operating state includes maintaining a lead to the bias circuit at a predetermined voltage level (claim 23).

Hayashihara discloses wherein the second circuit has a lower current draw than the first circuit (reads on claim 19) (see figure 4, col. 4 line 60- col. 5 line 5, col. 7 line 63-col. 8 line 43);

wherein the second circuit is operational only when the first circuit is powered down (reads on claim 20) (col. 7 line 63-col. 8 line 43);

switching a bias output includes switching a bias current and voltage from the first circuit to the second circuit (reads on claims 21 and 22) (col. 4 lines 60-65); and

wherein maintaining the bias circuit at the operating state includes maintaining a lead to the bias circuit at a predetermined voltage level (threshold value) (reads on claim 23) (col. 3 lines 55-58).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination with the teaching of Hayashihara for the purpose of controlling the transmission power of the transceiver.

Regarding claims 25, 28-30, 32, and 35-37 the combination of Jin et al. and Hasegawa discloses the biasing system of claims 24 and 31, however fails to disclose further comprising the bias circuit configured to provide the bias output to the main circuit during a time the main circuit is operating in the first mode (claims 25 and 32);

the main circuit consumes less power when operating in the power down mode operating in the first mode(claims 28 and 35);

the circuit is configured to maintain a lead to the bias circuit at a predetermined operating voltage level during a time the main circuit is operating in the power down mode (claims 29 and 36); and

wherein the main circuit is a LNA(claims 30 and 37).

Hayashihara discloses the biasing system further comprising the bias circuit configured to provide the bias output to the main circuit during a time the main circuit is operating in the first mode (reads on claims 25 and 32) (col. 4 line 60- col. 5 line 5, col. 8 lines 5-13);

the main circuit consumes less power when operating in the power down mode operating in the first mode (reads on claims 28 and 35) (col. 10 lines 7-19);

the circuit is configured to maintain a lead to the bias circuit at a predetermined operating voltage level (threshold level) during a time the main circuit is operating in the power down mode (reads on claims 29 and 36) (col. 3 lines 55-58); and

wherein the main circuit is a LNA (reads on claims 30 and 37) (see figure 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination with the teaching of Hayashihara for the purpose of controlling the transmission power of the wireless transceiver.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to the wireless transceiver:

U.S. Pat. No. 6489843 B1 to Masaaki Nishijima et al.

U.S. Pat. No. 6812786 B2 to Donald G. Jackson et al.

U.S. Pat. No. 6819179 B2 to Muthusamy Kumarasamy Raja et al.

U.S. Pub. No. 20040192408 A1 to Steven J. Sharp et al.

U.S. Pat. No. 4637073 to John R. Selin et al.

U.S. Pat. No. 6782062 B1to Christopher P. Wieck;

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EMEM EKONG whose telephone number is 571 272 8129. The examiner can normally be reached on 8-5 Mon-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571 272 7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EOE
10/13/05

NICK CORSARO
PRIMARY EXAMINER